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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/743,948	12/24/2003	Rod Walsh	4208-4172	9580
27123	7590	03/20/2008		
MORGAN & FINNEGAN, L.L.P. 3 WORLD FINANCIAL CENTER NEW YORK, NY 10281-2101			EXAMINER LOO, JUVENA W	
			ART UNIT 2616	PAPER NUMBER
			NOTIFICATION DATE 03/20/2008	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.		Applicant(s)	
	10/743,948		WALSH ET AL.	
	Examiner		Art Unit	
	Juvena Loo		2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on December 19, 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-64 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-64 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1, 21, and 40 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1, 21, and 40, it is not clear as in a situation where transmitting a data packet from one sending device to one receiving device at different rates and in different channels is performed. Therefore, the claims are vague and indefinite.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 58, 59, 60, 61, and 63 are rejected under 35 U.S.C. 102(b) as being anticipated by Hur et al. (Patent Number: 6,141,785).

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Hur discloses an error control method in an inter-multi-user multimedia communication environment comprising:

Regarding claim 58, an apparatus, comprising:

at least one processor for determining missing or mangled data in a data transmission sent by a sending device (Hur: see "The receiver detects...checksum of data packet" in column 4, lines 39 – 42);

a negative acknowledgement (NACK) and transmission mechanism for sending an acknowledgement or transmission of missing and mangled data to said sending device or to another receiving device (Hur: see "If the receiver...NACK is used for that" in column 6, lines 54 – 57); and

at least one network for establishing communication between said sending device and said receiving device as well as communication between receiving devices in the network (Hur: see "The partial loss...take charge of retransmission" in column 7, lines 20 – 34);

transmitting a retransmission of said missing or mangled data from said sending device or said other receiving device to complete the data packet and a data transmission session (Hur: see "The present invention...the procedure is terminated" in column 3, lines 29 – 57); and

a memory for storing the data transmission from the sending device or other receiving device (Hur: see "In case where...retransmission process" in column 6, lines 60 – 65).

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Regarding claim 59, *wherein said acknowledgment of said missing or mangled data is a multicast or unicast negative acknowledgement message* (Hur: see "If the receiver...NACK is used for that" in column 6, lines 54 – 57);

Regarding claim 60, *wherein said retransmission of missing or mangled data is a multicast or unicast message* (Hur: see Figure 3 and "The host generates...the multicast group" in column 10, lines 49 – 54).

Regarding claim 61, *wherein said missing or mangled data is retransmitted from said sending device or other receiving device that possesses the missing or mangled blocks* (Hur: see "In case where...retransmits the data" in column 6, lines 60 – 61).

Regarding claim 63, *where said missing or mangled data is from a previous transmission, an earlier transmission or a predicted transmission* (Hur: see "The partial loss...peer-host retransmits them" in column 7, lines 20 – 23).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1 – 9, 10 – 29, 31 – 48, and 50 - 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hur et al. (Patent Number: 6,141,785) in view of Vincent Roca and Benoit Mordelet ("Design of a Multicast File Transfer Tool on Top of ALC", Proceedings of the Seventh International Symposium on Computers and communications (ISCC'02).

Miller et al. discloses a data transmission method quickly and reliably transfers data from a source to recipients comprising:

Regarding claim 1, a method, comprising:

transmitting a data packet from at least one sending device to at least one receiving device at different rates and in different channels (Miller: see Figures 1 and 6; see also "Referring to FIG. 6, a heterogeneous multicast network...at many different speed links" in column 17, lines 45 – 55);

sending an acknowledgement or transmission of missing or mangled data from said receiving device to said sending device or to another receiving device (Miller: see Figure 1, 10, 12, and 14; see also "Referring to FIGS. 1 and 2, in accordance with...the link 24 (step 14)" in column 4, line 50 through column 5, line 2);

transmitting a retransmission of said missing or mangled data from said sending device or said other receiving device to complete the data packet and a data

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transmission session (Miller: see Figure 1 and “Referring to FIGS. 1 and 2, in accordance with...as a “round” or “pass”” in column 4, line 50 through column 5, line 19).

Miller does not disclose the feature: *determining at said receiving device missing or mangled data transmitted from said sending device using negative acknowledgement (NACK)-Oriented Reliable Multicast (NORM) protocols at the receiving device.*

R. Brian Adamson and Joseph P. Macker discloses an approach to use timer-based feedback suppression to facilitate scaling of NORM protocols comprising the feature: *determining at said receiving device missing or mangled data transmitted from said sending device using negative acknowledgement (NACK)-Oriented Reliable Multicast (NORM) protocols at the receiving device* (Adamson and Macker: see sections on “Exponential Timer Based Feedback Suppression”, “Suppression Performance for Multicast Feedback Messages”, and “Suppression Performance for Unicast-to-Source Feedback” on pages 1 – 3).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to incorporate the approach, as taught by R. Brian Adamson and Joseph P. Macker, into the system of Miller et al. in order to predict and suppress the amount of feedback traffic volume from receivers. The motivation is to avoid feedback implosion and to facilitate scaling of NORM protocols (Adamson and Macker: see Background).

Regarding claim 2, *wherein said acknowledgment of said missing or mangled data is a multicast or unicast negative acknowledgement message* (Miller: see Figure 1, 10, 12, and 14; see also "Referring to FIGS. 1 and 2, in accordance with... as a "round" or "pass"" in column 4, line 50 through column 5, line 19).

Regarding claim 3, *wherein said retransmission of missing or mangled data is a multicast or unicast message* (Miller: see Figure 1 and "Referring to FIGS. 1 and 2, in accordance with...as a "round" or "pass"" in column 4, line 50 through column 5, line 19; see also "A maximum pass...at a later time" in column 8, lines 15 – 31).

Regarding claim 4, *wherein said missing or mangled data is retransmitted from said sending device or said other receiving device that possesses the missing or mangled data from the data transmission* (Miller: see Figure 1 and "Referring to FIGS. 1 and 2, in accordance with...as a "round" or "pass"" in column 4, line 50 through column 5, line 19).

Regarding claim 5, *further comprising prioritizing the retransmitting of said missing or mangled data based on said acknowledgement, number of data transmissions missed, location of missed or mangled data or the like* (Miller: see Figure 1 and "Referring to FIGS. 1 and 2, in accordance with...as a "round" or "pass"" in column 4, line 50 through column 5, line 19).

Regarding claim 6, *further comprising retransmitting said missing or mangled data by retransmitting the original data transmission* (Miller: see Figure 1 and "Referring to FIGS. 1 and 2, in accordance with...as a "round" or "pass"" in column 4, line 50 through column 5, line 19).

Regarding claim 7, *further comprising retransmitting said missing or mangled data by retransmitting only the missing data of the original data transmission* (Miller: see Figure 1 and "Referring to FIGS. 1 and 2, in accordance with...as a "round" or "pass"" in column 4, line 50 through column 5, line 19).

Regarding claim 8, *further comprising repositioning said missing or mangled data in the data transmission* (Miller: see Figure 1 and "Referring to FIGS. 1 and 2, in accordance with...as a "round" or "pass"" in column 4, line 50 through column 5, line 19).

Regarding claim 9, *providing reliability management and congestion control to facilitate multicast transmission of data packets to receivers* (Miller: see "Congestion/Flow Control...control process can be made automatic" in column 10, line 25 through column 12, line 50; see also Figure 1 and "Referring to FIGS. 1 and 2, in accordance with...as a "round" or "pass"" in column 4, line 50 through column 5, line 19).

Regarding claim 11, *further comprising transmitting said acknowledgement or missing or mangled data from said receiving device using a negative acknowledgement (NACK) and retransmission mechanism* (Miller: see Figure 1 and “Referring to FIGS. 1 and 2, in accordance with...as a “round” or “pass”” in column 4, line 50 through column 5, line 19).

Regarding claim 12, *where said missing or mangled data is from a previous transmission, an earlier transmission or a predicted transmission* (Miller: see Figure 1 and “Referring to FIGS. 1 and 2, in accordance with...as a “round” or “pass”” in column 4, line 50 through column 5, line 19).

Regarding claim 13, *further comprising defining unidirectional transmission block identifiers and corresponding objects before transmitting data to a receiving device* (Miller: see “The server logically...block number and its frame number within that block” in column 7, lines 37 – 48).

Regarding claim 14, *wherein said data is transmitted from the sending device using unidirectional protocol* (Miller: see “Referring to FIG. 3...the data being sent” in column 5 line 64 through column 6, line 11; see also Figure 1 and “Referring to FIGS. 1 and 2, in accordance with...as a “round” or “pass”” in column 4, line 50 through column 5, line 19).

Regarding claim 15, *wherein said acknowledgement is transmitted by a receiving device using a bi-directional or uplink simplex protocol using the same transmission block identifier as the unidirectional protocol* (Miller: see "The server logically...block number and its frame number within that block" in column 7, lines 37 – 48).

Regarding claim 16, *further comprising sending an acknowledgment from said receiving or sending device that the missing or mangled data has been correctly received* (Miller: see "Referring to FIG. 3...the data being sent" in column 5 line 64 through column 6, line 11; see also Figure 1 and "Referring to FIGS. 1 and 2, in accordance with...as a "round" or "pass"" in column 4, line 50 through column 5, line 19).

Regarding claim 17, *wherein said acknowledgement contains a plurality of negative acknowledgements regarding missing or mangled data in the data transmission* (Miller: see Figure 1 and "Referring to FIGS. 1 and 2, in accordance with...as a "round" or "pass"" in column 4, line 50 through column 5, line 19).

Regarding claim 18, *said receiving device is a personal communication device, GPRS, WLAN, DVB or other similar wireless device* (Miller: see Figures 2 and 6; see

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also "Referring to FIGs. 1 and 2...over the link 24" in column 4, lines 51 – 60; see also "The link 24 can be...systems including DOS" in column 5, lines 27 – 39).

Regarding claim 19, *wherein said sending device is a server, IP-based device, GPRS, DVB other similar wireless device* (Miller: see Figures 2 and 6; see also "Referring to FIGs. 1 and 2...over the link 24" in column 4, lines 51 – 60; see also "The link 24 can be...systems including DOS" in column 5, lines 27 – 39).

Regarding claim 20, *said sending device and said receiving device are in the same network or in different networks* (Miller: see Figures 2 and 6; see also "Referring to FIGs. 1 and 2...over the link 24" in column 4, lines 51 – 60; see also "The link 24 can be...systems including DOS" in column 5, lines 27 – 39).

Regarding claim 21, *a computer readable medium including program code, executable in a computer, comprising:*

program code for transmitting a data packet from at least one sending device to at least one receiving device at different rates and in different channels (Miller: see Figures 1 and 6; see also "Referring to FIG. 6, a heterogeneous multicast network...at many different speed links" in column 17, lines 45 – 55);

program code for sending an acknowledgement or transmission of missing or mangled data from said receiving device to said sending device or to another receiving

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device (Miller: see Figure 1, 10, 12, and 14; see also "Referring to FIGS. 1 and 2, in accordance with...the link 24 (step 14)" in column 4, line 50 through column 5, line 2);

program code for transmitting a retransmission of said missing or mangled data from said sending device or said other receiving device to complete the data packet and a data transmission session (Miller: see Figure 1 and "Referring to FIGS. 1 and 2, in accordance with...as a "round" or "pass"" in column 4, line 50 through column 5, line 19).

Miller does not disclose the feature: *program code for determining at said receiving device missing or mangled data transmitted from said sending device using negative acknowledgement (NACK)-Oriented Reliable Multicast (NORM) protocols at the receiving device.*

R. Brian Adamson and Joseph P. Macker discloses an approach to use timer-based feedback suppression to facilitate scaling of NORM protocols comprising the feature: *program code for determining at said receiving device missing or mangled data transmitted from said sending device using negative acknowledgement (NACK)-Oriented Reliable Multicast (NORM) protocols at the receiving device* (Adamson and Macker: see sections on "Exponential Timer Based Feedback Suppression", "Suppression Performance for Multicast Feedback Messages", and "Suppression Performance for Unicast-to-Source Feedback" on pages 1 – 3).

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It would have been obvious to one of the ordinary skill in the art at the time of the invention to incorporate the approach, as taught by R. Brian Adamson and Joseph P. Macker, into the system of Miller et al. in order to predict and suppress the amount of feedback traffic volume from receivers. The motivation is to avoid feedback implosion and to facilitate scaling of NORM protocols (Adamson and Macker: see Background).

Regarding claim 22, *wherein said acknowledgment of said missing or mangled data is a multicast or unicast negative acknowledgement message* (Miller: see Figure 1, 10, 12, and 14; see also "Referring to FIGS. 1 and 2, in accordance with... as a "round" or "pass"" in column 4, line 50 through column 5, line 19).

Regarding claim 23, *wherein said retransmission of missing or mangled data is a multicast or unicast message* (Miller: see Figure 1 and "Referring to FIGS. 1 and 2, in accordance with...as a "round" or "pass"" in column 4, line 50 through column 5, line 19; see also "A maximum pass...at a later time" in column 8, lines 15 – 31).

Regarding claim 24, *wherein said missing or mangled data is retransmitted from said sending device or said other receiving device that possesses the missing or mangled data from the data transmission* (Miller: see Figure 1 and "Referring to FIGS. 1 and 2, in accordance with...as a "round" or "pass"" in column 4, line 50 through column 5, line 19).

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Regarding claim 25, *further comprising program code for prioritizing the retransmitting of said missing or mangled data based on said acknowledgement, number of data transmissions missed, location of missed or mangled data or the like* (Miller: see Figure 1 and "Referring to FIGS. 1 and 2, in accordance with...as a "round" or "pass"" in column 4, line 50 through column 5, line 19).

Regarding claim 26, *further comprising program code for retransmitting said missing or mangled data by retransmitting the original data transmission* (Miller: see Figure 1 and "Referring to FIGS. 1 and 2, in accordance with...as a "round" or "pass"" in column 4, line 50 through column 5, line 19).

Regarding claim 27, *further comprising program code for retransmitting said missing or mangled data by retransmitting only the missing data of the original data transmission* (Miller: see Figure 1 and "Referring to FIGS. 1 and 2, in accordance with...as a "round" or "pass"" in column 4, line 50 through column 5, line 19).

Regarding claim 28, *further comprising program code for repositioning said missing or mangled data in the data transmission* (Miller: see Figure 1 and "Referring to FIGS. 1 and 2, in accordance with...as a "round" or "pass"" in column 4, line 50 through column 5, line 19).

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Regarding claim 29, *providing reliability management and congestion control to facilitate multicast transmission of data packets to receivers* (Miller: see "Congestion/Flow Control...control process can be made automatic" in column 10, line 25 through column 12, line 50; see also Figure 1 and "Referring to FIGS. 1 and 2, in accordance with...as a "round" or "pass"" in column 4, line 50 through column 5, line 19).

Regarding claim 31, *further comprising program code for transmitting said acknowledgement or missing or mangled data from said receiving device using a negative acknowledgement (NACK) and retransmission mechanism* (Miller: see Figure 1 and "Referring to FIGS. 1 and 2, in accordance with...as a "round" or "pass"" in column 4, line 50 through column 5, line 19).

Regarding claim 32, *where said missing or mangled data is from a previous transmission, an earlier transmission or a predicted transmission* (Miller: see Figure 1 and "Referring to FIGS. 1 and 2, in accordance with...as a "round" or "pass"" in column 4, line 50 through column 5, line 19).

Regarding claim 33, *further comprising program code for defining unidirectional transmission block identifiers and corresponding objects before transmitting data to a receiving device* (Miller: see "The server logically...block number and its frame number within that block" in column 7, lines 37 – 48).

Regarding claim 34, *wherein said data is transmitted from the sending device using unidirectional protocol* (Miller: see "Referring to FIG. 3...the data being sent" in column 5 line 64 through column 6, line 11; see also Figure 1 and "Referring to FIGS. 1 and 2, in accordance with...as a "round" or "pass"" in column 4, line 50 through column 5, line 19).

Regarding claim 35, *wherein said acknowledgement is transmitted by a receiving device using a bi-directional or uplink simplex protocol using the same transmission block identifier as the unidirectional protocol* (Miller: see "The server logically...block number and its frame number within that block" in column 7, lines 37 – 48).

Regarding claim 36, *further comprising program code for sending an acknowledgment from said receiving or sending device that the missing or mangled data has been correctly received* (Miller: see "Referring to FIG. 3...the data being sent" in column 5 line 64 through column 6, line 11; see also Figure 1 and "Referring to FIGS. 1 and 2, in accordance with...as a "round" or "pass"" in column 4, line 50 through column 5, line 19).

Regarding claim 37, *further comprising program code for sending a plurality of negative acknowledgements in the same negative acknowledgement message* (Miller: see Figure 1 and "Referring to FIGS. 1 and 2, in accordance with...as a "round" or

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“pass” in column 4, line 50 through column 5, line 19; see also Figure 4 and “As the server passes block...or not received” in column 8, lines 32 – 44).

Regarding claim 38, *wherein said receiving device is a personal communication device, GPRS, WLAN, DVB or other similar wireless device* (Miller: see Figures 2 and 6; see also “Referring to FIGs. 1 and 2...over the link 24” in column 4, lines 51 – 60; see also “The link 24 can be...systems including DOS” in column 5, lines 27 – 39).

Regarding claim 39, *wherein said sending device is a server, IP-based device, GPRS, DVB or other similar wireless device* (Miller: see Figures 2 and 6; see also “Referring to FIGs. 1 and 2...over the link 24” in column 4, lines 51 – 60; see also “The link 24 can be...systems including DOS” in column 5, lines 27 – 39).

Regarding claim 40, *a system comprising:*

at least one sending device for transmitting data to at least one receiving device at different rates and in different channels (Miller: see Figures 1 and 6; see also “Referring to FIG. 6, a heterogeneous multicast network...at many different speed links” in column 17, lines 45 – 55);

sending an acknowledgement or transmission of missing or mangled data to said sending device or to another receiving device regarding retransmission of at least

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missing or mangled data (Miller: see Figure 1, 10, 12, and 14; see also "Referring to FIGS. 1 and 2, in accordance with...the link 24 (step 14)" in column 4, line 50 through column 5, line 2);

at least one network for establishing communication between said sending device and said receiving device as well as communication between receiving devices in the network (Miller: see Figures 1 and 2; see also "Referring to FIGS. 1 and 2, in accordance with...as a "round" or "pass"" in column 4, line 50 through column 5, line 19); and

transmitting a retransmission of said missing or mangled data from said sending device or said other receiving device to complete the data packet and a data transmission session (Miller: see Figure 1 and "Referring to FIGS. 1 and 2, in accordance with...as a "round" or "pass"" in column 4, line 50 through column 5, line 19).

Miller does not disclose the feature: *at least one receiving device for determining device missing or mangled data transmitted from said sending device using negative acknowledgement (NACK)-Oriented Reliable Multicast (NORM) protocols at the receiving device.*

R. Brian Adamson and Joseph P. Macker discloses an approach to use timer-based feedback suppression to facilitate scaling of NORM protocols comprising the feature: *at least one receiving device for determining missing or mangled data transmitted from said sending device using negative acknowledgement (NACK)-*

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Oriented Reliable Multicast (NORM) protocols at the receiving device (Adamson and Macker: see sections on “Exponential Timer Based Feedback Suppression”, “Suppression Performance for Multicast Feedback Messages”, and “Suppression Performance for Unicast-to-Source Feedback” on pages 1 – 3).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to incorporate the approach, as taught by R. Brian Adamson and Joseph P. Macker, into the system of Miller et al. in order to predict and suppress the amount of feedback traffic volume from receivers. The motivation is to avoid feedback implosion and to facilitate scaling of NORM protocols (Adamson and Macker: see Background).

Regarding claim 41, *wherein said acknowledgment of said missing or mangled data is a multicast or unicast negative acknowledgement message* (Miller: see Figure 1, 10, 12, and 14; see also “Referring to FIGS. 1 and 2, in accordance with... as a “round” or “pass”” in column 4, line 50 through column 5, line 19).

Regarding claim 42, *wherein said retransmission of missing or mangled data is a multicast or unicast message* (Miller: see Figure 1 and “Referring to FIGS. 1 and 2, in accordance with...as a “round” or “pass”” in column 4, line 50 through column 5, line 19; see also “A maximum pass...at a later time” in column 8, lines 15 – 31).

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Regarding claim 43, *wherein said missing or mangled data are retransmitted from said sending device or another receiving device that possesses the missing or mangled data* (Miller: see Figure 1 and "Referring to FIGS. 1 and 2, in accordance with...as a "round" or "pass"" in column 4, line 50 through column 5, line 19).

Regarding claim 44, *wherein the retransmission of said missing or mangled data prioritized based on the acknowledgement or missing or mangled data received, number of data transmissions missed, location of missed or mangled data or the like* (Miller: see Figure 1 and "Referring to FIGS. 1 and 2, in accordance with...as a "round" or "pass"" in column 4, line 50 through column 5, line 19).

Regarding claim 45, *wherein said missing or mangled data by retransmitting along with the entire original data transmission* (Miller: see Figure 1 and "Referring to FIGS. 1 and 2, in accordance with...as a "round" or "pass"" in column 4, line 50 through column 5, line 19).

Regarding claim 46, *wherein retransmitting said missing or mangled data involves retransmission only the missing data of the original data transmission* (Miller: see Figure 1 and "Referring to FIGS. 1 and 2, in accordance with...as a "round" or "pass"" in column 4, line 50 through column 5, line 19).

Regarding claim 47, *wherein said retransmitting involves repositioning said missing or mangled data in the data transmission* (Miller: see Figure 1 and "Referring to FIGS. 1 and 2, in accordance with...as a "round" or "pass"" in column 4, line 50 through column 5, line 19).

Regarding claim 48, *including reliability management and congestion control to facilitate multicast transmission of data packets to receivers* (Miller: see "Congestion/Flow Control...control process can be made automatic" in column 10, line 25 through column 12, line 50; see also Figure 1 and "Referring to FIGS. 1 and 2, in accordance with...as a "round" or "pass"" in column 4, line 50 through column 5, line 19).

Regarding claim 50, *further comprising transmitting said acknowledgement from said receiving device using a negative acknowledgement (NACK) and retransmission mechanism* (Miller: see Figure 1 and "Referring to FIGS. 1 and 2, in accordance with...as a "round" or "pass"" in column 4, line 50 through column 5, line 19).

Regarding claim 51, *where said missing or mangled data is from a previous transmission, an earlier transmission or a predicted transmission* (Miller: see Figure 1 and "Referring to FIGS. 1 and 2, in accordance with...as a "round" or "pass"" in column 4, line 50 through column 5, line 19).

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Regarding claim 52, *wherein sending device defines unidirectional transmission block identifiers and corresponding objects before transmitting data to a receiving device* (Miller: see “The server logically...block number and its frame number within that block” in column 7, lines 37 – 48).

Regarding claim 53, *wherein said sending device transmits data using a unidirectional protocol* (Miller: see “Referring to FIG. 3...the data being sent” in column 5 line 64 through column 6, line 11; see also Figure 1 and “Referring to FIGS. 1 and 2, in accordance with...as a “round” or “pass”” in column 4, line 50 through column 5, line 19).

Regarding claim 54, *wherein said receiving device transmit an acknowledgement using a bi-directional or uplink simplex protocol using the same transmission block identifier as the unidirectional protocol* (Miller: see “The server logically...block number and its frame number within that block” in column 7, lines 37 – 48).

Regarding claim 55, *wherein said sending device and receiving device are in the same network or in different networks* (Miller: see Figures 2 and 6; see also “Referring to FIGs. 1 and 2...over the link 24” in column 4, lines 51 – 60; see also “The link 24 can be...systems including DOS” in column 5, lines 27 – 39).

Regarding claim 56, *wherein said receiving device is a personal communication device, GPRS, WLAN, DVB or other similar wireless device* (Miller: see Figures 2 and 6; see also "Referring to FIGs. 1 and 2...over the link 24" in column 4, lines 51 – 60; see also "The link 24 can be...systems including DOS" in column 5, lines 27 – 39).

Regarding claim 57, *wherein said sending device is a server, IP-based device, DVB, GPRS or other similar wireless device* (Miller: see Figures 2 and 6; see also "Referring to FIGs. 1 and 2...over the link 24" in column 4, lines 51 – 60; see also "The link 24 can be...systems including DOS" in column 5, lines 27 – 39).

7. Claims 9 – 10, 29 – 30, 48 – 49, and 62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller et al. (Patent Number: 5,727,002) in view of Vincent Roca and Benoit Mordelet ("Improving the Efficiency of a Multicast File Transfer Tool based on ALC", INRIA, No 4411, March 2002).

Miller et al. and R. Brian Adamson and Joseph P. Macker disclose all the claimed limitations as in paragraph 6 above. Miller et al. and R. Brian Adamson and Joseph P. Macker do not disclose the features: regarding claim 10, *further comprising sending the original data transmission from said receiving device using an active Asynchronous Layered Coding (ALC) mechanism*; regarding claim 30, *further comprising program code for sending the original data transmission from said receiving device using an*

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active Asynchronous Layered Coding (ALC) mechanism; regarding claim 49, wherein said data transmitted from said sending device using an active Asynchronous Layered Coding (ALC) mechanism.

Vincent Roca and Benoit Mordelet disclose improving the overall performances of a multicast file transfer tool built on top of ALC comprising:

Regarding claim 10, *further comprising sending the original data transmission from said receiving device using an active Asynchronous Layered Coding (ALC) mechanism* (Roca and Mordelet: see sections 4.1 through 4.3 in pages 5 - 7);

Regarding claim 30, *further comprising program code for sending the original data transmission from said receiving device using an active Asynchronous Layered Coding (ALC) mechanism* (Roca and Mordelet: see sections 4.1 through 4.3 in pages 5 - 7);

Regarding claim 49, *wherein said data transmitted from said sending device using an active Asynchronous Layered Coding (ALC) mechanism* (Roca and Mordelet: see sections 4.1 through 4.3 in pages 5 - 7).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to incorporate the approach, as taught by Roca and Mordelet, into the system

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of Miller et al. in improve overall performances of multicast file transfer (see section 1.3 on page 3).

8. Claim 62 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hur et al. (Patent Number: 6,141,785) in view of Vincent Roca and Benoit Mordelet ("Improving the Efficiency of a Multicast File Transfer Tool based on ALC", INRIA, No 4411, March 2002).

Hur et al. discloses all the claimed limitations as in paragraph 4 above. Hur et al. does not disclose the feature: regarding claim 62, further comprising sending the original data transmission from said server using an active Asynchronous Layered Coding (ALC) mechanism.

Vincent Roca and Benoit Mordelet disclose improving the overall performances of a multicast file transfer tool built on top of ALC comprising:

Regarding claim 62, further comprising sending the original data transmission from said server using an active Asynchronous Layered Coding (ALC) mechanism (Roca and Mordelet: see sections 4.1 through 4.3 in pages 5 - 7).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to incorporate the approach, as taught by Roca and Mordelet, into the system of Hur et al. to improve overall performances of multicast file transfer (see section 1.3 on page 3).

9. Claim 64 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hur et al. (Patent Number: 6,141,785) in view of Miller et al. (5,727,002).

Hur et al. discloses all the claimed limitations as in paragraph 4 above. Hur et al. does not disclose the feature: regarding claim 64, *wherein said receiving device is personal communication device, GPRS, WLAN, DVB or other similar wireless device.*

Miller et al. discloses a data transmission method quickly and reliably transfers data from a source to recipients comprising:

Regarding claim 64, *wherein said receiving device is personal communication device, GPRS, WLAN, DVB or other similar wireless device* (Miller: see Figures 2 and 6; see also "Referring to FIGs. 1 and 2...over the link 24" in column 4, lines 51 – 60; see also "The link 24 can be...systems including DOS" in column 5, lines 27 – 39).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to incorporate the approach, as taught by Miller et al., into the system of Hur

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et al. in providing both fast and reliable transmission of files (see column 2, lines 20 - 21).

Response to Arguments

10. Applicant's arguments with respect to claims 1 - 64 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juvena Loo whose telephone number is (571)270-1974. The examiner can normally be reached on Monday - Friday: 7:30am - 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kwang Yao can be reached on (571) 272-3182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic

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Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Juvena Loo/
Examiner, Art Unit 2616
March 13, 2008

/Kwang B. Yao/

Supervisory Patent Examiner, Art Unit 2616